of competition in rapidly supplying products that consumers demand, are necessary components of promoting consumer welfare.

Treatment of new services is, to say the least, somewhat different under current price cap rules. Although there's no reference to it in the price cap orders or rules, the position of the Commission staff is that the LECs (but not others) are prohibited by Part 69 of the rules from offering a new access service that uses the switched network unless a waiver of the rules is obtained.[47] The Commission staff has diligently considered all requests for waivers. Nonetheless, the requirement to obtain a waiver provides competitors with long advance notice of any new offering, and an opportunity to comment on why the LECs should not be allowed to offer it in competition with them. The "first to market" advantage usually enjoyed by an innovator is thus lost.

If the innovating LEC is lucky enough to obtain a waiver over its competitors' protests, it may be permitted to offer the new service, but only after making a detailed cost-of-service showing.[48] Not only is the usual premium for

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[47] See for example Petitions for Waiver of Part 69 of the Commission's Rules Dedicated Access Lines, Open Network Architecture, 7 FCC Rcd. 1424 (1992).

[48] This requires the submission of engineering studies, time and wage studies, or other cost accounting studies to identify the direct costs of providing the new service; overhead cost data; a study containing a projection of costs for a representative 12 month period; estimates of the effect of the new service on traffic and revenues, including the traffic and revenues of other services; and supporting workpapers for estimates of costs, traffic and revenues. Amendments of Part 69 of the Commission's Rules Relating to the Creation of Access Charge Subelements for Open Network Architecture, 6 FCC Rcd.

innovation unavailable,[49] but the cost-based price itself is increasingly difficult to predict because of ad hoc and sometimes inconsistent holdings on what "new service" means and what cost support will pass muster.[50] The innovator must also face the risk of having to disclose proprietary cost support publicly and, therefore, to competitors.[51] Thus the LEC innovator undertakes risks that will not be rewarded by the market.

4524, para. 42 (1991).

[49] The "risk premium" available for pricing new services does not compensate for innovation. The test for the risk premium is not whether the market would have rewarded the innovator with a price above cost, but whether "they are undertaking a particularly risky venture, which would not be economically practical absent the risk premium they requested." Amendments of Part 69 of the Commission's Rules Relating to the Creation of Access Charge Subelements for Open Network Architecture, 6 FCC Rcd. 4524, para. 43 (1991).

[50] For example, while acknowledging that unbundled ONA BSEs would otherwise be restructured services, the Commission required them to meet new service standards anyway. See Amendments of Part 69 of the Commission's Rules Relating to the Creation of Access Charge Subelements for Open Network Architecture, 8 FCC Rcd. 2104, para. 2 (1993). See also 800 Data Base Access Tariffs and the 800 Service Management System Tariff, 9 FCC Rcd. 715 (1994), released January 31, 1994, in which the Common Carrier Bureau gave carriers the Hobson's choice of disclosing their cost allocation models (which the Bureau acknowledged contained proprietary data) for 800 database exogenous costs to competitors without any restrictions on use, or coming up with a new method. The Bureau had reached the opposite conclusion in an earlier order, upheld by the U.S. District Court of the District of Columbia, holding that an essentially identical cost allocation model should be withheld from public review (Commission Requirements for Cost Support Material to be Filed with Open Network Architecture Access Tariffs, 7 FCC Rcd 1526 (Com.Car.Bur. 1992)).

[51] See 800 Data Base Access Tariffs and the 800 Service Management System Tariff, 9 FCC Rcd. 715 (1994).

Between 6 and 18 months later, the new service becomes subject to price cap regulation. If the Commission decides to create a new band or sub-band for the service,[52] the initial service price -- regardless of the market response it met -- will be more or less fixed thereafter.

This chain of uncertainty, delay, and limited opportunity for gain discourages innovation and investment in new services from the word go. For example, in November, 1993, we filed a petition for waiver of the rules to offer a discounted switching service in Zone 1. The waiver still has not been acted upon. In December, 1993, we filed a tariff to offer a similar discount on special access service in Zone 1. The tariff has been deferred five times at the Commission staff's request and still has not taken effect.

Some regulation of new services may be warranted if customers cannot obtain an equivalent service from another supplier within a reasonable time (the Department of Justice defines that time, for a related purpose, as two years[53]). Yet this is likely to be rare. Under today's new service rules, we're regulated much like a drug manufacturer who will have an exclusive patent on a new product for many years. In fact it's difficult to conceive of any new services that would not be

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[52] See, for example, Provision of Access for 800 Service, 8 FCC Rcd. 907 (1993).

[53] 1992 Merger Guidelines, Section 3.2, reprinted at 4 Trade Reg. Rpt. (CCH) Para. 13,104.

obtainable from alternative suppliers today, let alone within two years.

The Commission's definition of new service as one that "add[s] to the range of options" available to customers is another reason that review of new services should be streamlined. New services are by definition ones that customers can do without and still be as well off as they were before. Overpricing such services would be self-defeating. It would just dampen demand and invite competitive entry at a more market-sensitive price.

It makes no sense not to relax regulation of new services unless there can be no other source of supply within a reasonable time. In wire centers that meet USTA's criteria for competitive market areas, it is extremely unlikely we will not have immediate competitors to provide comparable new services. New services in CMAs should be regulated as described in USTA's proposal. New services in transitional market areas should only have to demonstrate positive net revenue effects.

New services in initial market areas should have long run incremental costs as a floor. Overheads need not be allocated to direct costs to determine the floor; they are not part of the LRIC. The allocation of overheads to new services may put us at an artificial disadvantage against competitors offering the same service. It may be appropriate if new services do recover some overheads, but the Commission should not require such an allocation or specify an allocation method. Economists have often observed that there is no single valid way to allocate

joint and common costs.[54] Requiring allocation of overheads to be "uniform" (as the current rules now do) introduces the same distortions as other mandatory allocation methods. Specifying allocation methods imposes a degree of arbitrariness and uncertainty on the process that disserves consumers and providers alike. Finally, the Commission should not penalize the inventor of a new service by requiring the disclosure of proprietary cost information to competitors.

I. Equalization of Regulation for LECs and CAPs.

Baseline Issue 9a: Whether our current rules for computing AT&T's exogenous access costs should be revised to equalize the treatment of LEC and CAP access rates in the calculation of AT&T's exogenous access costs.

When it created AT&T's price cap formula, the Commission found that its concerns regarding administrative burden and its desire for strict adherence to the definition of "exogenous costs" outweighed the LECs' concerns regarding the increased incentive for AT&T's uneconomic bypass.[55] Since that time, however, competition to provide AT&T with access services has radically changed. Not only has access competition increased substantially, but the basic tenets have changed. AT&T recently affirmed its commitment to obtain access from a variety of

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[54] See for example William J. Baumol, Superfairness, (Cambridge, 1987) p. 146.

[55] Policy and Rules Concerning Rates for Dominant Carriers, 4 FCC Rcd. 2873, paras. 320-321 (1988).

suppliers.[56] We understand AT&T will soon release a national request for proposals to provide SONET and OC48 alternative access.

The Commission should end the discriminatory exogenous cost treatment of LEC access charge changes. The requirement for AT&T to flow through our access charge reductions to its price cap indexes puts our services at an artificial disadvantage to our competitors in AT&T's make-or-buy analysis. The Commission has referred repeatedly to the existence of robust competition in the long-distance market. If this is the case, competition will assure that all reductions in AT&T's input costs, including access charge reductions, will be flowed through to the marketplace as price reductions.

Baseline Issue 9b: Whether any other rules or policies that relate to LEC price cap regulation should be revised to equalize our treatment of LECs and CAPs, and if so, what the revised rules and policies should be.

In Docket 93-36 the Commission has ordered streamlined regulation for "nondominant" carriers like CAPs.[57] Streamlined regulation for nondominant providers in competitive markets is consistent with our view of zero-based regulation. However, the

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[56] "Alternative Access Business Examined at NCTA; Teaming With Teleport," Communications Daily, May 6, 1992, pp. 5-6.

[57] Tariff Filing Requirements for Nondominant Common Carriers, 8 FCC Rcd. 6752 (1993), appealed sub nom. Southwestern Bell Corp. v. FCC and U.S., No. 93-1562 (D.C. Cir., filed August 30, 1993).

distinction the Commission has made so far between nondominant and dominant carriers is artificial, untested, and overly broad.

The Commission determined we had market power everywhere without actually examining any markets. That's unfortunate, because the Commission's actions in Docket 90-132 show that it is capable of engaging in sound market power analysis. An examination of markets by service and geography would have shown that in some metropolitan markets we are not dominant. The potentially small number of such markets doesn't make the omission de minimus, because these metropolitan markets, where our services are required to be priced high above LRIC, make a hugely disproportionate contribution to other below-cost markets that our franchise obligations prevent us from exiting. These markets are like an indicator species whose extinction signals trouble for an entire ecological community. Our markets are interdependent. When our dominance in high profit-markets is extinguished, the system urgently needs rebalancing if it's to continue working as a seamless whole.

We submit that streamlined regulation of competitive markets would be in the public interest if, and only if, it's applied equally to all providers. We propose the Commission examine actual markets and where competition exists, apply the same zero-based regulation to all competitors. No one has proved that asymmetrical regulation in such markets promotes competition, reduces prices, or otherwise serves the public interest. The distinction made by the Commission between

nondominant and dominant carriers is overly broad because it isn't based on evidence from actual markets, properly defined.

Some of our competitors argue that asymmetrical regulation is necessary to prevent us from using our "monopoly" power to compete unfairly with them, through cross-subsidies or other unspecified means. The biggest defect of this complaint is that the cross-subsidies flow from competitive services to "monopoly" ones, not the other way around. The Commission has recognized this subsidy flow from competitive services to noncompetitive services in Dockets 91-141 and 91-213.[58] In markets with multiple providers, our competitors take advantage of LEC rates that are required to be far above incremental costs, using such LEC rates to extract a supercompetitive premium from consumers.

Every one of the Commission's past proposals to streamline regulation and promote competition has been met with the objection that the incumbent provider will cross-subsidize. Long-distance services, information services, sale of CPE, billing and collection services -- all were met with this objection. But it has never, to our knowledge, been borne out.

The enhanced services business typifies the chimerical nature of cross-subsidy allegations. Partly as a result of pricing rules designed to protect against cross-subsidy,

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[58] See for example Transport Rate Structure and Pricing, 7 FCC Rcd. 7006, n. 125 (a "usage-based interconnection charge permits continuation of support flows currently reflected in LEC access rates"); Expanded Interconnection with Local Telephone Facilities; Amendment of the Part 69 Allocation of General Support Facilities Costs, 7 FCC Rcd. 7369, para. 115 (1992).

Pacific Bell's and Nevada Bell's interstate ONA BSEs brought in a combined total of $424 in 1993. (No zeros have been left off this figure.) Yet contrary to the dire forecasts that we would discriminate in favor of our own enhanced services line of business through cross-subsidies or other means, we not only don't dominate the market for enhanced services, we are a relatively minor player. For example we estimate that PBIS, Pacific Bell's voice mail subsidiary, has less than 2% of the national voice mail market. It has only about 9% of the California voice mail market.

To analyze markets and market power, the Commission should require all providers of access service to include service area descriptions as part of their interstate tariffs. These descriptions should be specific enough to permit the Commission to determine whether a customer at a given address has a competitive choice. They could be used by the Commission to determine the extent to which local exchange carriers have competitive alternatives, and thus, the extent to which the Commission can rely on market forces rather than regulation in those markets. Unless all providers are required to file such information, the Commission cannot make any findings of market dominance.

In some cases (see Section IV below), we have some information about the extent of our competitors' networks. Information like this can be gleaned from news media, from filings with local regulatory, building, or planning authorities, from consultants and commercial sources, or directly from

consumers. We can infer some competitive developments from our own network information, such as trends in switched access usage.

Yet as well as being burdensome to collect, all of these data combined form a necessarily incomplete picture, one that understates the amount of competition that already exists. Even if all providers are required to file the information we suggest, tracking competition in the local exchange market will be orders of magnitude more difficult than measuring market share in long distance service has been. It will not be a simple matter (as it was with long distance service) of reporting each carrier's switched access usage. We don't know how much local traffic doesn't pass through our networks. In many cases, we don't even know where our competitors' networks are. See Map 1.

To have the consistent, reliable information about the state of competition in access markets that it needs, the Commission will have to require reporting from the market participants themselves. These reporting requirements should be the same for all providers. Data will have to be reported on a defined geographical basis. Aggregate data at a national, state, or even LATA level will not be useful for assessing market power in the relevant markets. For example, the current fiber deployment reports provide only the total fiber miles deployed nationwide by each reporting entity. This doesn't allow the Commission to determine whether a provider has market power in a particular market. It demonstrates nothing about market power, for example, to observe that CAPs have deployed only 131,000 miles of fiber nationwide, while LECs have deployed

5,504,370.[59] Our competitors don't have to deploy nearly as much fiber as we do to wreak havoc on our business. Without any obligation to provide universal service, they could replicate only a small part of our network, and capture nearly all of the profits.

IV. TRANSITIONAL ISSUES: COMPETITION IS VIGOROUS.

Transition Issue 1a: What is the current state of competition for local exchange and interstate access?

In California today, as in most states, the idea of the exclusive local franchise has come to an end. The CPUC, in its Infrastructure Report, has called for full competition in California within three years.[60] Our network will be unbundled to enable that competition: we will offer unbundled loops and switch ports that will enable all competitors to provide access and toll services in full competition with us. See below, p. 106.

But technology and the marketplace have not waited for regulators, who can no more halt new providers from entering the market than King Canute could command the ocean to subside. What regulators can do to contribute to consumer welfare is assure

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[59] See Notice, para. 22. If this comparison is relevant, then by the same token, AT&T must be deemed to have twice as much market power in California as we do. See below, p. 94.

[60] Enhancing California's Competitive Strength: A Strategy for Telecommunications Infrastructure, California Public Utilities Commission, November 1993.

that in competitive markets, no one provider is artificially helped or harmed by asymmetrical regulation.

1. Private and Virtual Private Networks. Businesses today receive a significant portion of their dial tone from sources other than LECs. We estimate that about one-third of California businesses receive their dial tone from a PBX. Private networks, such as the State of California, Hughes Aircraft, General Motors, and the Federal Government, use no LEC dial tone for on-net calls.

Virtual private networks offered by interexchange carriers also provide local service independent of the LECs. AT&T's FCC Tariff No. 12 and MEGACOM services originate dial tone at AT&T's switches. MEGACOM completes all calls placed by the customer, be they local, interstate or international. AT&T's SDN service provides dial tone, and terminates local calls to "on-net" numbers. IXCs give volume discounts to customers for switched usage, in effect encouraging the use of services such as MEGACOM for all calls. Special promotions by AT&T currently give customers discounts that apply only to new volumes of intrastate traffic, an incentive to switch over to AT&T any intraLATA traffic it isn't already carrying. When used in conjunction with special access facilities connected directly to an IEC POP, customers today effectively are selecting their IEC as their local exchange provider. Northern Business Information estimates a 22% compound annual growth rate for VPN revenues over the 1992-97 period. We can't measure how much intraLATA traffic we've lost this way, but the huge shrinkage in our share of the

800 market (below, p. 92) is probably a fraction of the amount lost (since MEGACOM and other VPNs are only partially cross-elastic with our 800 services). The IXCs can measure how much of this traffic is intraLATA but don't file the data.

2. Competitive Access Providers ("CAPs"). CAPs need only legal authority to offer local exchange service in our area. In states where local competition is permitted, CAPs have already entered. The Locate Telephone Company, a CAP doing business in New York, has joined MFS and Teleport in offering local telephone services to the New York Metropolitan Area and northern New Jersey.[61] MFS has sought regulatory authority to offer local service in Illinois and Maryland.[62] The New York Times on October 13, 1993, reported that MFS had received a more favorable regulatory status from the New York State regulators, under which New York Telephone will be required to give MFS greater access to telephone numbers and MFS will be granted co-carrier status equal to other local exchange companies.[63] Teleport is also to receive the same status. Id.

These arrangements from other states could be implemented almost immediately in California. MFS has just

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[61] "New Competitor for NYNEX," New York Times, August 25, 1993, at D-12.

[62] Cindy Skrzycki, "Opening Up Lines of Communication; FCC Ruling Could Mean Increased Competition for Local Phone Service," Washington Post, August 3, 1993, at B-1.

[63] "More Phone Competition," New York Times, October 13, 1993, at D-7.

succeeded in a hostile takeover attempt of Centex Telemanagement, a California-based IXC that resells Centrex combined with long distance lines.[64] This immediately puts MFS into the business of providing many local telecommunications, plus long distance.

Teleport has installed a 5ESS switch in San Francisco, and plans to install additional switches in San Diego and Los Angeles. It has requested assignment of full prefixes, each with 10,000 numbers. We know they mean business. There are "TCG" cable vault covers in the street just outside our headquarters building in San Francisco.

MFS has said that California is on the "short list" for a Class 5 switch. It has already installed Asynchronous Transfer Mode ("ATM") switches in San Francisco and Los Angeles and is installing an ATM network in San Jose. See MFS Brochure "High-Speed LAN Interconnect (HLI) Services." Linkatel, Pacific Lightwave, Time Warner AxS, Times Mirror Cable Television and Phoenix Fiberlink also reportedly plan to offer local exchange services in California.

With these switches, CAPs can provide local service. They can complete all local calls between customers on their fiber rings. They can complete local calls between customers on their network, even though the customers are not on a ring, through special access facilities provided to them today by the LECs. They can complete local calls between their customers and

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[64] See David Einstein, "Centex Invites New Bids to Thwart MFS Takeover", San Francisco Chronicle, April 30, 1994, at D2; and "MFS Communications Co.", Wall St. J., May 3, 1994 at A6.

non-customers in combination with currently available DID/DOD trunks. When a CAP such as Teleport is assigned a prefix with its block of 10,000 numbers, IECs can then send calls directly to the CAP switch as if it were a Class 5 office. CAPs are in the local exchange and exchange access business.

These switches complete the fiber networks the CAPs have been installing in California's high density telecommunications corridors. 30% of our business revenues come from the 0.5% of our serving territory located in or near the major downtown areas. 1.5% of the land area accounts for 60% of the business calling revenues. 5.9% of our land area accounts for 85% of business revenues.

Usage is also highly concentrated by customer. One percent of our business customers account for 45% of our statewide intraLATA toll volumes. Ten percent drive 75% of the total. Residential service is similarly concentrated. We estimate that 25% of all residential customers generate 75% of our intraLATA toll revenues.

In some of our markets, CAPs have made spectacular inroads. Quality Strategies measured our proportion of hicap circuits[65] provided to large business customers in the Los Angeles and San Francisco markets which other providers of hicap

[65] Quality Strategies measured only special access and exchange private lines, although CAPs are also offering, or planning to offer, additional services such as local switching services and high-speed data transfer services. Quality Strategies determined proportions on a DS1 equivalent basis.

have entered[66] in the second quarter of 1993, and again about nine months later in the first quarter of 1994. In the Los Angeles markets, our proportion of all special access circuits fell from 74% in 1993 to 69% in 1994. Our proportion of even more competitive hicap point-to-IXC POP circuits fell from 69% to 64%. In San Francisco, we fell from 81% of special access in second quarter 1993 to 75% in first quarter 1994. Our share of hicap point-to-POP in San Francisco fell from 80% in second quarter 1993 to 68% in first quarter 1994. We also measured Sacramento and San Diego markets for the first time in 1994 and found significant losses there, even though CAPs have operated there for little more than a year.

% of DS1 Equivalent Services Provided by Pacific Bell

	1993	1994
Los Angeles:		
Total special access circuits	74%	69%
Point-to-POP connections	69%	64%
San Francisco:		
Total special access circuits	81%	75%
Point-to-POP connections	80%	68%

[66] Customers were chosen by Quality Strategies using random number generation algorithms from lists provided by business list brokers. Customers were surveyed in zip codes in San Francisco and Los Angeles, reaching far beyond the financial districts of each city. The sample sizes were designed to provide statistical validity based on a 90% confidence interval, with a 6% margin of error for each metropolitan area sureyed.

What is most astonishing about this loss of market power to CAPs is that it has preceded both the CPUC's authorization of full local exchange competition, and the effects of mandatory switched and special interconnection. These CAP market shares were achieved without benefit of a single cross-connect in a wire center with collocation, and with no authority to hold out the availability of intraLATA switched service in competition with the LEC. This portends explosive growth. The 62 central offices currently tariffed by Pacific Bell for interstate switched and special access collocation give the CAPs access to 82% of its special access DS1 and DS3 business and nearly 35% of its switched access business. As of March 1994, Pacific Bell had 32 orders for collocation in 27 central offices, giving CAPs access to 46% of its access traffic.

CAPs today merely provide transport for local services offered by IECs or other high volume users, and they can serve the transmitters of cellular, PCS, and other wireless networks. But not for long. In a 1992 interview, with Royce Holland, president of MFS, it was reported that:

> Following interconnection authority for CAPs, a relative rapid resolution of local dial-tone, switched access, interLATA toll, and number portability issues is likely, he predicted. By the end of the decade, he predicted that all of the local exchange market would be deregulated, competitive access would be a multi-billion dollar industry, and CAPs would have a 35% share of the market.[67]

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[67] Telco Competition Report, Vol. 1, No. 1, p. 14 (October 15, 1992).

The two leading CAPs in Los Angeles and San Francisco did not enter until 1989 and 1990. Yet in the areas and lines of business they have entered, they already have about as much share as the entire non-AT&T share of the interexchange usage market. What took AT&T's competitors almost two decades to achieve in the long distance market, has taken MFS and Teleport about four years in ours. In New York City, where CAPs first entered business, it was estimated last year that CAPs held 50% of the DS1/DS3 market.[68] For businesses in the downtown areas, CAP fiber is the alternative local loop. We estimate that MFS and Teleport alone have enough fiber installed in the Los Angeles and San Francisco downtown areas to handle all of our transport traffic for these areas.

When speaking to regulators, the CAPs discount the extent of their market penetration by emphasizing that they serve only a tiny percentage of our customers. This is misleading. The number of customers isn't the correct measure for defining a market where competition is premised on cream-skimming those customers with large, concentrated volumes of traffic. In such a market, to say that Bechtel, BankAmerica, or tenants of the ARCO building in Los Angeles -- former customers of ours who've switched over some or all of their traffic to CAPs -- counts the same as a residential customer makes no sense. What counts are

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[68] Reform of the Interstate Access Charge Rules, FCC RM 8356, Reply Comments of Southwestern Bell Telephone Company, November 16, 1993, Appendix I, p. 4.

revenue streams and profitability. On these measures CAPs have had a success that's stunning. In areas representing twenty-five zip codes in Los Angeles and San Francisco, there is no credible argument against pricing flexibility for us. At the same time that contribution to universal service is being lost, consumers in those areas are paying too much.

3. Cable TV Providers. Downtown areas will not be islands of competition. The installation of fiber in cable television systems eliminates the repeater and other equipment which hinder two-way transmission over cable. Other technological limitations have fallen away as well. Video technology has been revolutionized by advancements in video compression technology which enable 500, or possibly 1000, television channels to be carried simultaneously over coaxial cable. Using digital compression technology, two-way video services, as well as voice and data, may be delivered to homes and businesses over a hybrid fiber optics-coaxial cable network. For example, AT&T recently announced its new "Cable Loop Carrier" technology to allow both television and telephone conversations to travel through a coaxial loop at the same time.[69] Three cable TV systems in California are interactive; another 50 are currently undergoing modification to make them interactive.

Numerous tests are underway to assess interactive services over cable. In Orlando, Time Warner will test technology for delivering interactive services over cable TV

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[69] "AT&T System Calls on Dial Tone, Video," Newark Star Ledger, August 1, 1993, at 17.

networks. Viacom is conducting a technology and market test with AT&T in Castro Valley, California. TCI, AT&T and US West are conducting a test in Littleton, Colorado. Cable companies are also very active in testing PCS transmission over their cable networks. On December 23, 1993, the FCC awarded Cox Enterprises, Inc., a pioneer's preference PCS license in the Southern California MTA. Cox thus avoids having to bid at the auction for a PCS license for the world's largest cellular market. MCI is testing telephony over cable with Jones Lightwave in Alexandria, Virginia and in Chicago.[70] As MCI's director of access policy and planning stated: "We need to help get the cable TV industry positioned as a competitor" to the LECs.[71]

These technological breakthroughs give cable TV providers access to lucrative telephone revenue streams with modest incremental investment. Regardless of whether consumers ever take an interest in interactive services, the spreading of network investment across combined telephone and television revenue streams fundamentally changes both industries.

Teleport Communications Group and TCI have been building fiber loops throughout downtown San Diego; Time Warner has announced plans for a 60-mile loop.[72] TCI announced plans to

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[70] Fred Dawson, "Jones Will Test Cable Telephony in Va., Chicago," Multichannel News, November 29, 1993, at 3.

[71] "Telephone Services to be Tested Over Cable TV Systems," Telecommunications Reports, November 29, 1993, at 10.

[72] James Crawley, "Fiber-Optic Ring to be Built in Area: Time Warner Announces Plans for 60-Mile Loop," San Diego Union Tribune, June 24, 1993, at 1A.

build a fiber optic backbone in the Bay area by 1995.[73] TCI and three other cable companies are also planning to use fiber cable to interconnect their "headends," forming a regional hub network.[74] This cable TV alliance is made up of TCI, Viacom, Century, and Lenfast Communications. The four plan to interconnect their "super-headends" at Sunnyvale (TCI), San Francisco (Viacom), Albany (Century), and Oakland (Lenfast). The network will ring the Bay area with two separate fiber routes in each direction. This will provide diversity and increased reliability. Each route is expected to contain at least 24 strands of fiber.[75] This regional hub network will interconnect with the cable networks these companies already have in place. Thus, for minimum incremental investment these cable companies will create a complete overlay network in the Bay area capable of providing local telephone service.

TCI also announced its intention to spend $2 billion nationally over the next four years to lay 7000 route miles of fiber (1.1 million fiber miles based on 144 fibers per route) to serve its 10 million customers throughout the country. The project has already begun in the greater San Francisco Bay area

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[73] "MCI's fiber loop brings future closer," San Jose Mercury News, October 30, 1993, at D10.

[74] Gary Kim, "Viacom, TCI Fiber Net Plans Advance," Multichannel News, November 2, 1992, at 31.

[75] "National Fiber Optic Network: Telecommunications Inc. (TCI) Accelerates Its Four-Year, $2 Billion, Nationwide Fiber Optic Construction Project," Edge Publishing, April 19, 1993.

where TCI operates cable systems in 25 communities, and is installing fiber in many more.

Similarly, Cox Cable is reported to be installing excess capacity in its fiber networks in anticipation of offering telecommunications services. Cox has installed approximately 200 fiber route miles, or 6000 fiber miles, in the San Diego area. Cox had 437,000 subscribers in California in 1993.

4. The Convergence of Our Competitors. The convergence of telephone and television has caused CAPs and cable TV providers to be in the same business. The two industries have merged. Digital Direct is owned by TCI. Phoenix Fiberlink is owned by Phoenix American. Teleport is owned by several cable providers including Cox, TCI, Comcast Corp., Continental Cablevision, and Time Warner. AxS is owned in part by Time Warner. Eastern Tele Logic is owned by Comcast. Hyperion Telecommunications is owned by Adelphia and Continental (Adelphia also owns CAPs in Syracuse and Pittsburgh). Indiana Digital Access is owned by Time Warner. Kansas City Fibernet is owned by TCI and Time Warner.[76] MFS, which is now partially owned by Peter Kiewit & Sons and partially publicly held, is the only major CAP without strong cable ties.

Notwithstanding the collapse of the TCI-Bell Atlantic and Southwestern Bell-Cox deals, the telephone and cable industries will continue to converge, through joint ventures,

[76] Reform of the Interstate Access Charge Rules, FCC RM 8356, Reply Comments of Southwestern Bell Telephone Company, Nov. 16, 1993, Appendix I, Table 1, p. 3.

strategic alliances, and other arms-length relationships if not through equity acquisitions or outright mergers. (Interestingly, the principals in both of these deals offered the same reason for their collapse -- the Commission's regulation of cable TV earnings. Representatives of TCI called that decision "extreme, excessive and unwarranted."[77] Cox accused the Commission of having "dropped a bomb on the bridges to the interactive superhighway."[78]) US West has taken a 25% interest in Time Warner, the country's second largest cable operator with 6.8 million subscribers. Time Warner is the fifth largest cable operator in California with 331,000 subscribers in 1993. BellSouth announced that it is taking a 22.5% stake in Prime Management, which controls the 24th largest cable operator in the country. BellSouth gains access to Prime's 500,000 subscribers, none of which are in California. Prime is also a programmer, owning Hospitality Network, which provides in-room programming and interactive TV services in hotel rooms.

NYNEX has formed an alliance with Viacom, reportedly agreeing to invest $1.2 billion for about a 12% stake. Through this investment NYNEX strengthens Viacom's bid for Paramount Communications. Viacom is the third largest cable provider in California with 10 systems and 440,000 subscribers. Viacom recently announced plans to merge with Blockbuster Entertainment.

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[77] "$33 Billion Phone-Cable Deal Killed," San Francisco Chronicle, February 24, 1994, at A1.

[78] "$4.9 Billion Cable Deal Called Off," New York Times, April 6, 1994, at C1.

For these RBOCs, the "interactive services" they plan to provide through their newly-acquired cable companies include basic telephone service. Nationwide, cable company facilities pass 95% of the nation's homes. On June 25, 1993, Time Warner filed a petition in New York asking permission to provide a comprehensive range of local and residential business telephone services in Rochester and Albany.[79] RBOC-cable ventures will be in a position to do the same in California in the near future, and probably before the time the CPUC can complete proceedings to authorize local competition.

This, then, is the portrait of the new local information transport company. It provides businesses with fiber all the way to the top floor of the highrise. It has expertise in switching and transport, and will have its own local loops and switches. It provides video programming. It has in place the coax, equipment, and capability to provide consumers with 500, perhaps 1,000 television channels, along with both wireline and wireless telephone service.

California is a natural place for these next generation providers to operate. Through Viacom, NYNEX already has an entree to 440,000 households in our state. US West already has entry to 294,000 households through Time Warner.

The British experience is instructive. Telewest, owned by US West and TCI, is the largest cable provider in the United

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[79] Petition of Time Warner AxS of New York City, L.P. for Amendment of its Certificate of Public Convenience and Necessity, filed October 12, 1993 with New York State Public Service Commission.

Kingdom. It has begun offering local service in conjunction with Mercury Communications, the officially sanctioned competitor to British Telecom ("BT"). Telewest offers a combined television and telephone package, which it has been marketing mainly through price differentiation and promotion. It has been offering customers 10% to 15% discounts off of their current BT bills. Telewest suggests to consumers that the savings could cover the cost of premium cable channels. The promotion is working: Telewest is reported to be supplying 60% of its 160,000 U.K. cable subscribers with telephone services.[80]

5. Wireless Providers. The twisted pair loop increasingly fails to meet increasing customer demands for mobility. Already, we estimate that 30% of the business loops in California are provided by cellular. The growth rate of cellular has been remarkable. More cellular loops are being built in America each year than landline loops. Consumer interest in mobility is also evident from the popularity of cordless telephones. Peter Huber estimates that 70 million cordless phones are in service today.[81]

The explosion of demand for mobility has been tempered only by its price. At first it seemed that PCS would change all that -- providing the mobility of cellular service at a price

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[80] Raymond Snoddy, "U.K. Company News: Telewest Raises 190M Pounds to Expand its Network," The Financial Times, July 23, 1993, at 22.

[81] Peter W. Huber, et al., The Geodesic Network II, 1993 Report on Competition in the Telephone Industry (1993), p. 6.62.